

Basic GPS - Global Positioning System

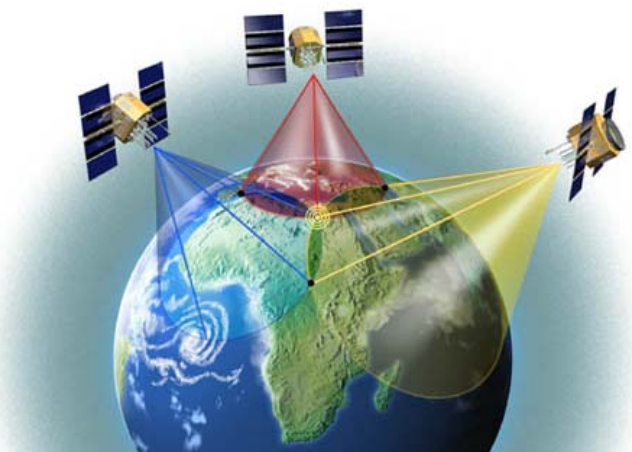
The **Global Positioning System (GPS)** is made up of **24 satellites** orbiting the globe at an altitude of 28,000 km.



The GPS system is handled by the US Department of Defence and was basically built to give moving subs an exact position when firing missiles at small specific targets.

To prevent the location data from being used by the enemy, the GPS gave an intentional error of around 50 meters/150ft when introduced to the public. However, since May 2000, that error has been removed.

A small handheld GPS unit typically gives a position with an accuracy of 15-meter/50 ft, and when using DGPS (Differential GPS), sailors have an accuracy of 3-meter/10 ft - or less than the width of the yacht. DGPS communicates with a land-based station which has an accurate known position.



Satellites are transmitting radio signals to GPS receivers with the speed of light. Receiving signals from 3 satellites simultaneously, the GPS receiver calculates the position by **triangulation**.

The accuracy is expected to rise even further with signals generated by increasingly more satellites.

Typical GPS Screens:

Satellite Page	Mark Waypoint	Main MENU	Map Page	Navigation Page
<p>READY TO NAVIGATE ACCURACY: 15.4°C SIGNAL</p>	<p>MARK WAYPOINT CAMP OK? <input type="checkbox"/> ELEV: 1013ft N 38°57.711' W 094°47.935'</p>	<p>MENU MARK WAYPOINT ROUTE TRACK SETUP 06:09pm 31-DEC-04</p>	<p>HOME CAR LAKE CAMP RIDGE</p>	<p>DOCK 18.3 mi 46:43 TO GO SPEED 23.5 mph</p>